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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,674

04/08/2005

Yasuhiro Miyamoto

Q87401

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04/04/2006

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EXAMINER

PRESTON, ERIK D

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/530,674

Applicant(s)

MIYAMOTO ET AL.

Examiner

Erik D. Preston

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 06 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 & 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyamoto et al (WO 99/41825 supplied by applicant).

With respect to claim 1, Miyamoto teaches a serial configuration linear motor constituted of a plurality of movers (Fig. 1, #31,32 & 33) each formed from an armature having a polyphase balancing winding, and a stator having a permanent magnet (Fig. 1, #1); wherein the plurality of movers are disposed so as to face each other with a gap therebetween on the stator, and the polyphase balancing windings in the respective movers are connected in series (such as is seen in Fig. 8).

With respect to claim 2, Miyamoto teaches the liner motor of claim 1, wherein the plurality of movers are of the same configuration (as seen in Fig. 2a).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (JP 2002-136096 supplied by applicant) in view of Miyamoto et al (WO 99/41825 supplied by applicant).

With respect to claims 1-3, Maekawa teaches a serial configuration linear motor constituted of a plurality of movers each formed from an armature having a winding and

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a stator having a permanent magnet; wherein the plurality of movers are disposed so as to face each other with a gap therebetween on the stator, the windings being serially connected in series, connecting terminals (Fig. 1, #8a & 8b) are provided on front and rear ends of the movers, and winding terminals of a rear-end terminal in a final mover are short-circuited with each other (Fig. 1, #10), but it does not teach said winding being a polyphase balancing winding. However, Miyamoto teaches a linear motor having a polyphase balancing winding. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the winding of Maekawa in view of the winding as taught by Miyamoto because the winding of Miyamoto zeros the sum of cogging in the motor caused by the movers (Miyamoto, Abstract).

With respect to claim 4, Maekawa in view of Miyamoto teaches the linear motor of claims 1 and 2, and Miyamoto teaches that the number of phases of each of the plurality of movers is set to three phases, the number of movers is set to three (as seen in Fig. 1) and phases of the respective movers are shifted from one another by  $120^\circ$  (Abstract).

With respect to claim 5, Maekawa in view of Miyamoto teaches the linear motor of claims 1 & 2, Miyamoto teaches that a thermister is incorporated in each of the plurality of movers (Col. 8, Lines 49-51), and Maekawa teaches that terminals are provided on the front and rear ends of each of the movers. It would have been obvious to one of ordinary skill in the art at the time of the invention to connect the thermisters in series using the terminals as taught by Maekawa since it would not require the use of any additional elements in the invention of Maekawa in view of Miyamoto.

### ***Response to Arguments***

Applicant's arguments filed 03/06/2006 have been fully considered but they are not persuasive. In response to the applicant's argument that neither Miyamoto nor Maekawa teach a plurality of movers, it is noted that each of the armature modules of Miyamoto and Maekawa provide a motive force for driving a linear motor. Like the wheels of a 4-wheel drive automobile, each of the modules provides its own motive force, and the fact that they are connected together (exactly as the four wheels of a car are connected to a chassis) does not diminish the fact that each module is a separate mover. It is also noted that there is no positive recitation in claim 1 of the movers being formed separately, and even if there was such a recitation, which there is not, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the movers of Miyamoto and Maekawa separately since it has been held that making a one piece component into two separate pieces is not considered to be patentably distinct (In re Dulberg, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961)).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

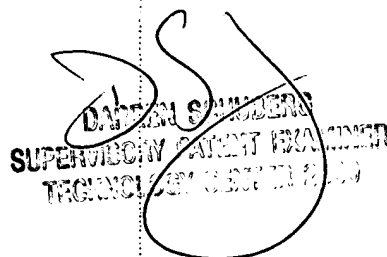
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



03/28/2006



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